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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dong-Gyu Kim

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EXAMINER

HEYMAN, JOHN S

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,899	Applicant(s) KIM, DONG-GYU	
	Examiner JOHN HEYMAN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6, 8-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 8-11 and 13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim is a duplicate of Claim 5 and should therefore be canceled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5, 6, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (US 6,870,187) taken with Yamamoto (US 2002/0182766, now cited on PTO 892 herein). Looking at Fig. 1B of Chung, a gate line 121 is formed on an insulating substrate 110 including a gate electrode 123; a gate insulating layer 140 is formed on gate line 121; a semiconductor layer 154 formed on gate insulating layer 140; a data line 171 (Fig. 1A) is formed on the insulating layer including source electrode 173; a drain electrode 175 is formed on the semiconductor layer; then regarding the last clause, a storage conductor 177 is formed on gate insulating layer 140 overlapping gate

line 121 and contacting pixel electrode 190. Not shown by Chung, is the color filter formed directly on the data line and drain electrode and having a first opening exposing the drain electrode; a light blocking layer formed on the color filter, a passivation layer formed on the color filter with a hole exposing the drain electrode, a pixel electrode formed on the passivation layer, and a spacer formed on the passivation layer. These features are shown by Yamamoto in Fig. 1 thereof. Thus, a color filter 108, light blocking layer 109, passivation layer 110 formed on color filter 108 and light blocking layer 109 with a contact hole 111 exposing drain electrode 106 as recited. A pixel electrode 112 is then formed on passivation layer 110 and contacting the drain electrode through contact hole 111; a spacer 113 is formed on passivation layer 110. It would have been obvious to include the teachings of Yamamoto in Chung for the reason given in Yamamoto, namely, to make a LC panel lighter and thinner and not easily deformed (paragraphs 2 and 11).

5. Regarding Claims 2 and 3 note paragraphs 53 and 55 respectively to meet the organic material limitation for blocking layer of Claim 2 and the spacer of Claims 3.

6. Regarding Claims 5 and 8 (insofar as definite), note second opening, contact hole 182 in Fig. 1B of Chung through passivation layer 180 that would necessarily go through the color filter 108 of Yamamoto exposing storage conductor 177 in Chung for connection to pixel electrode 190 thereof.

7. Regarding Claim 6, note storage electrode 121 in Chung to meet the limitation of this claim.

8. Regarding Claim 9, note para. 54 wherein Yamamoto discloses an acrylic material to meet the limitation in this claim.

9. Regarding Claim 10, note semiconductor layer 154 having the same planar shape as data lines 171 and drain electrodes 175 to meet the limitation of this claim.

10. Regarding Claim 11, note second panel 201 in Yamamoto facing first panel 101, which includes common electrode 212 as recited in clause 9. The remaining limitations in this claim are as described with reference to the rejection of Claim 1 above.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chung and Yamamoto as applied to claim 11 above, and further in view of Lee et al (Lee – US 6,535,259), of record. Not shown by either Chung or Yamamoto is the protrusion formed on at least one of the first and second panels, having a height smaller than the spacer, and having slanted surfaces. Lee shows this feature in Fig. 5 therein in which protrusion 90 with slanted sides, and has a height smaller than spacer 113 of Yamamoto. It would be obvious to apply the protrusion teaching of Lee in Yamamoto for the reason given in Lee, namely, to obtain a wide viewing angle and a fast response time (col. 1, line 8).

12. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (Kim – US 2006/0092361) taken with Yamamoto, cited above. Fig. 2B of Kim shows a first panel 110 including a gate line N-1 (Fig. 1) including a gate electrode 123a; a gate insulating layer 140, a semiconductor layer 154, a data line 171 formed on the gate insulating layer with the semiconducting layer including a drain and source electrodes 175a and 173a respectively, a second panel 210 facing first panel 110

including a common electrode 270 and color filter 230. Not shown by Lee is the light blocking layer formed directly on the data line including an organic material, a passivation layer formed on the light blocking layer including a contact hole, a pixel electrode formed on the passivation layer and contacting the drain electrode through the contact hole. Yamamoto shows these features in Fig. 1 therein where light blocking layer 109 is formed directly on the data line and is made of an organic material (para. 53), a passivation layer 110 is formed on the light blocking layer, and includes a contact hole 111 as recited. A pixel electrode 112 is formed on passivation layer 110 and contacts drain electrode 106 through the contact hole as recited. A spacer 113 is then formed between the first and second panels as recited in the last clause of Claim 14. In addition to the structural features taught by these references, Kim teaches in para. 79 that his passivation layer 180 is formed by coating an organic material having a low dielectric constant "equal to or less than 4.0 as recited in clause 6 of this claim. It would have been obvious to apply the teachings of Yamamoto in Kim for the reasons given in Yamamoto, namely, to make LC panels lighter and thinner and not easily deformed (paragraphs 2 and 11). Also, it would have been obvious to apply the passivation layer features of Kim to Yamamoto for the reason given in Kim, namely, to provide good planarization characteristics (para. 79).

13. With regard to Claim 18, note para. 79 wherein Kim discloses the material for the passivation layer comprises SiOF or SiOC as recited to thus meet the limitation of this claim.

14. Claims 16 and 17 are rejected as Claims 1 and 11 above, but further in view of Kim, cited above. Note paragraph 79 wherein the material for the passivation layer comprises SiOF or SiOC as recited. It would have been obvious to apply the particular material taught by Kim as the passivation material of Yamamoto or Chung for the reason given in Kim, namely, to provide good planarization characteristics (para. 79).

15. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and Yamamoto as applied to claim 14 above, and further in view of Lee, cited above. Just as in the rejection of Claim 13 above, Lee teaches a protrusion 90 in Fig. 5 with a slanted surface formed on one of the panels in which the height thereof is smaller than the spacer as recited in this claim. It would have been obvious to apply the protrusion of Lee in Yamamoto for the reason given in Lee, namely, to obtain a wide viewing angle and fast response time (col. 1, line 8).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN HEYMAN whose telephone number is (571)272-5730. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571- 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Heyman/
Examiner, Art Unit 2871